Claim Listing

1–12. (canceled)

13. (previously presented) A method for calendering a fibrous web in a calender which includes at least a first roll stack having three or five rolls, forming two or four pairs of rolls wherein the rolls of said roll pairs are movable with respect to each other in a direction defined by the first roll stack so as to form an open or closed nip, and a second roll stack having at least five rolls forming at least four roll pairs wherein the rolls of said roll pairs are movable with respect to each other in a direction defined by the second roll stack so as to form an open or closed nip, the method comprising the steps of:

passing a fibrous web between each pair of rolls in the first stack and each pair of rolls in the second stack to form a threaded path;

moving at least one pair of rolls from said first stack or said second stack to form at least one nip therebetween;

producing a first grade of paper of selected PPS and selected Hunter Gloss % by calendering the web in the calender along the threaded path, followed by producing a second grade of paper of second selected PPS and second selected Hunter Gloss% along the threaded path by increasing or decreasing the number of nips formed by the calender.

14. (previously presented) The method of claim 13, wherein at least one roll pair in each roll stack is arranged to be in nip contact to form in each roll stack at least one nip that calenders the fibrous web.

15. (previously presented) The method of claim 13 wherein the paper web continuously passes along the threaded path while the first paper grade is changed to the second paper grade.

16. (currently amended) The method of claim 13 wherein the rolls are arranged by increasing or decreasing the number of nips formed by the calender to produce a web with a Hunter Gloss % of less than 50 % and a PPS of greater than 2 micrometers, followed by or preceded by ~~the roll pairs being arranged for a~~ production of paper grades with a Hunter Gloss % of greater than 50 % and a PPS of less than 2 micrometers.

17–26. (canceled)

27. (previously presented) A method for calendering a fibrous web in a calender which includes at least two roll stacks, including a first roll stack and a second roll stack, said first stack having three or five rolls, forming two or four pairs of rolls wherein the rolls of said roll pairs are movable with respect to each other, in a direction defined by the first roll stack so as to form an open or closed nip, and said second roll stack having at least five or seven rolls forming four or six roll pairs, wherein the rolls of said roll pairs are movable with respect to each other, in a direction defined by the second roll stack so as to form an open or closed nip, and in which calender the web is passed to run between each roll pair of each roll stack, the method comprising the steps of:

disposing the rolls of each of the at least two roll stacks such that at least one roll pair is in nip contact to form a first nip;

causing the web to pass through said first nip to calender the web; and

adjusting the rolls of the at least two roll stacks to increase the number of nips through which the web passes to form a higher-quality paper grade, or to decrease the number of nips through which the web passes to form a lower-quality paper grade.

28. (previously presented) The method of claim 27, wherein at least one roll pair in each roll stack is arranged to be in nip contact to form in each roll stack at least one nip that calenders the fibrous web.

29. (previously presented) The method of claim 27, wherein the paper web continuously passes between each roll pair while the rolls are adjusted to form a higher-quality paper grade, or to form a lower-quality paper grade.

30. (previously presented) The method of claim 27, wherein the rolls are arranged to produce a web with a Hunter Gloss % of less than 50 % and a PPS of greater than 2 micrometers, followed by or preceded by the roll pairs being arranged for a production of paper grades with a Hunter Gloss % of greater than 50 % and a PPS of less than 2 micrometers.

31. (previously presented) The method of claim 27, wherein over time the rolls are arranged to produce paper webs within a range of a Hunter Gloss % from 30 % to 91% and a PPS of 0.5 micrometers to 4.5.

32. (previously presented) The method of claim 13, wherein over time the rolls are arranged to produce paper webs within a range of a Hunter Gloss % from 30 % to 91% and a PPS of 0.5 micrometers to 4.5.

33. (previously presented) The method of claim 27, wherein the pairs of rolls of the first stack and the second stack are supported on support or relief arms which are movable with respect to each other; and further comprising the step of increasing or decreasing the length of a hydraulic or pneumatic cylinder or a power screw positioned between the arms to open or close the pairs of rolls.

34. (previously presented) The method of claim 27, wherein the pairs of rolls of the first stack and the second stack are mounted to support or relief arms; and further comprising the steps of holding the arms fixed and moving the pairs of rolls with respect to each other on articulated joints between the arms and said rolls, by increasing or decreasing the length of a hydraulic or pneumatic cylinder or a power screw mounted between adjacent ones of said joints.

35. (previously presented) The method of claim 27, wherein the rolls of the pairs of rolls of the first stack and the second stack are mounted to support or relief arms; and further comprising the step of opening or closing the pairs of rolls by moving a wedge between the arms of the roll pairs by increasing or decreasing the length of a hydraulic or pneumatic cylinder or a power screw mounted between one of said arms and the wedge.

36. (previously presented) The method of claim 27, wherein the rolls of the pairs of rolls of the first stack and the second stack have bearing housings to which the rolls are journalled to be rotated but are not provided with support or relief arms; and further comprising the step of increasing or decreasing the length of a hydraulic or pneumatic cylinder or a power screw positioned between the bearing housings to open or close the pairs of rolls.

37. (previously presented) The method of claim 13, wherein the pairs of rolls of the first stack and the second stack are supported on support or relief arms which are movable with respect to each other; and further comprising the step of increasing or decreasing the length of a hydraulic or pneumatic cylinder or a power screw positioned between the arms to open or close the pairs of rolls.

38. (previously presented) The method of claim 13, wherein the pairs of rolls of the first stack and the second stack are mounted to support or relief arms; and further comprising the steps of holding the arms fixed and moving the pairs of rolls with respect to each other on articulated joints between the arms and said rolls, by increasing or decreasing the length of a hydraulic or pneumatic cylinder or a power screw mounted between adjacent ones of said joints.

39. (previously presented) The method of claim 13, wherein the rolls of the pairs of rolls of the first stack and the second stack are mounted to support or relief arms; and further comprising the step of opening or closing the pairs of rolls by moving a wedge between the arms of the roll pairs by increasing or decreasing the length of a hydraulic or pneumatic cylinder or a power screw mounted between one of said arms and the wedge.

40. (previously presented) The method of claim 13, wherein the rolls of the pairs of rolls of the first stack and the second stack have bearing housings to which the rolls are journalled to be rotated but are not provided with support or relief arms; and further comprising the step of increasing or decreasing the length of a hydraulic or pneumatic cylinder or a power screw positioned between the bearing housings to open or close the pairs of rolls.